

ABSTRACT

The invention contemplates an electrical power meter and method of operating the same, where the meter has electronic components (e.g., a power supply and a voltage sensing circuit) and receives alternating current (AC) voltage from an electrical power line. The inventive meter includes a power supply that converting the AC voltage to a direct current (DC) voltage for powering the electronic components. Also, the AC voltage provides an electrical reference potential for the electronic components. The inventive meter further includes a DC power source (e.g., a diode and/or a resistor in series connection) in a parallel circuit configuration with the AC voltage. The DC power source provides a DC bias voltage to the AC voltage. The AC voltage may create a relatively small voltage across the diode device.